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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,193	08/09/2001	Alan A. Winder	41482/253466	4292

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EXAMINER

JAWORSKI, FRANCIS J

ART UNIT PAPER NUMBER

3768

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/925,193	WINDER ET AL	
	Examiner	Art Unit	
	Jaworski Francis J.	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-33, 35, 37-46, 51-56 and 61-67 is/are rejected.
- 7) ☒ Claim(s) 1-27, 34, 36, 47-50 and 57-60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/16/04, 2/11/04, 7/17/03, 2/6/03, 11/25/02, 5/23/02, 12/26/01</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 1 – 4, 12 – 31, 39 – 43 and 66 - 67 are objected to because of the following informalities: the relationship of the 'interface' to the 'human tissue in 'vivo' and/or the 'acoustically coupling (step)' should be clarified since it is subject to diverse interpretations if the interface is construed as unrelated to tissue.

[Alternately stated, the Examiner is grouping under the clarification request all claims which do not state an 'interface' relationship to skin/soft tissue/bone yet which 'set the bar/standard' correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 28 – 30, 32 – 33, 35, 37-38, 44 are rejected under 35 U.S.C. 102(b) as being anticipated by any of Yamamoto et al (US5856622) Fig.7 or Rost (US4680967) Figs. 1 - 2, or Gruber (US4570487) Figs. 1 and 5, or Baumel (US4467659) Figs. 2 and 6 – 7 since, if applicants intended use is accorded no patentable weight, the refractive wedge devices which in Yamamoto et al act as a measurement pair and have two top surfaces and side surfaces with two transducers mounted thereon such that mode conversion would be possible dependent on an unspecified material forming the

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test interface, these would suffice to anticipate the claimed structure, and in the case of Rost the top surface is in the vicinity of 13 (uppermost angled surface) , with the respective transducers mounted at different angles with respect to the bottom surface and along the side of their respective wedges, and in the case of Gruber, in the aforementioned figures 1 and 5 may be considered the topmost surfaces and the transducer pairs nested at differing angles along side surfaces with respect to the bottom. In the case of Baumoel, the mode converter includes a transducer nested into side surfaces and at an angle to the bottom surface and below the top surface thereof. All of these devices require an excitation signal in order to function, and all describe measurement signal emissions which have a spatial directivity and temporal epoch under control of their triggered source. A critical angle feature cannot serve as distinguishing insofar as the tested material and the insonation frequency are unspecified.

[Alternately stated, the Examiner is arguing a set of structure analogs having the specifics of the geometry of one-or-more-angulated-transducer-containing-refractive-blocks as claimed, and would be capable of causing longitudinal or shear transmission across tissue interfaces at the (unspecified) insonation frequencies.]

Claims 44 – 46 are rejected under 35 U.S.C. 102(b) as clearly anticipated by Baumoel as cited above or as anticipated by Kalinoski or in the alternative, under 35 U.S.C. 103(a) as obvious over Kalinoski (US4195517) since Kalinoski in Figs. 8 or 9 evidences that , if applicants' intended use be accorded no patentable weight under the plural interpretation for 'at least one transducer', mode conversion block assemblies

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heretofore included plural angulated side surfaces together with top and bottom surfaces and plural transducers mounted thereon; if applicants' critical angle feature be accorded no patentable weight since the material of the interface and the frequency of the insonation is unrecited. In the alternative, it is argued that the transducer set could function as claimed dependent upon selection of a suitable interface material.

Additionally the Fig. 7 paired embodiment may be argued to be trapezoidal (in the sense of general outline) or could be made trapezoidal as an obvious variant since the recessed reflective surface may be adjusted and reflects the merging of the separate trapezoidal blocks of Fig. 8.

Claim 56 is rejected under 35 U.S.C. 102(b) as being anticipated by Baumel which teaches the inset of an acoustic transducer within a trapezoidal mode conversion wedge block. Again the intended use is accorded no patentable weight nor is the critical angle relationship since neither the interface material nor the insonation frequency are specified.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied against claim 29 supra, further in view of Akiyama (US4557148), since the latter evidences that it was known to task control of transmit receive functions for ultrasound systems involving refractive or mode conversion blocks to a microprocessor per element 63 of Figure 7.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 28 above, and further in view of Lynnworth (US3575050) since the latter evidences that it was well known that elastomeric materials were suitable for coupling energy out of a mode converter assembly, see col. 3 lines 1 – 42 thereof.

Claims 39 – 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 28 above, and further in view of Hill et al (US6065350) insofar as the latter teaches in cols. 2 – 3 bridging that such mode converters may be used in association with fluid conduit testing such that acoustic impedances as in the silicone transition and velocities used may be akin to those found in the body which is also primarily liquid.

Claims 51 – 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumoel or Kalinoski as applied to claim 44 above, and further in view of Hill et al as argued supra, since the latter evidences that such mode conversion blocks may be used in conjunction with fluid materials having acoustic impedances and velocities similar to tissue whereupon silicone materials may incorporate into the block.

Claims 61 – 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumoel as applied to claim 56 above, and further in view of Hill et al for reasons paralleling those set forth above.

Claims 66 – 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalinoski or Baumoel as generally described above, further in view of Akiyama as also described above, since if applicants' intended use be accorded no patentable weight, acoustic transducer –driven mode conversion blocks were heretofore known to be microprocessor controllable since their energization program requires no further processor sophistication to implement. Again, the particular interface behaviour is accorded no patentable weight since the interface material and the nature of the insonation as to frequency are unstated.

Allowable Subject Matter

Claims 5 – 11 would be allowable upon remedying of the objection to the parent claims or if they be re-written in independent self-contained format.


Claims 1 – 4, 12 – 27 would be allowable upon remedying of the objection issue.

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Claims 34, 36, 47 – 50, 57 - 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Duffill (US6105431) and Motegi et al (US4930358) Figs. 3 – 5 and Sato et al (US5280728) s are cited as analogous to Yamamoto et al save that the paired transducer-wedge block combinations are not described in terms of a unitary mode converter.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.


Francis J. Jaworski
Primary Examiner

FJJ:fjj

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